

Remarks

Claims 1-9 are pending in the instant application. Applicants have amended claims 1-7 and 9 to more fully conform with U.S. practice and to delete multiple dependencies. Applicants have cancelled claim 8, without prejudice. Applicants have also added new claims 10 and 11. A version of the claims marked up to show the amendments, as well as a clean version of the claims encompassing the amendments, is attached hereto.

Applicants respectfully assert that all amendments are fairly based on the specification, and respectfully request their entry.

Applicants believe that the claims, as amended, are in allowable form, and earnestly solicit the allowance of claims 1-7 and 9-11.

Respectfully submitted,



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Claims (marked-up version showing amendment(s))

Page 27, line 1:

[CLAIMS]

What is claimed is:

1. (once amended) An affinity-controlling material, [wherein]comprising a stimulus-responsive polymer and an affinitive substance (ligand) having affinity for a target substance [are]independently attached[, preferably covalently,] to a support matrix.
2. (once amended) The affinity-controlling material [as claimed in]of claim 1, wherein the affinity between the affinitive substance and the target substance is [possible to change reversibly]reversibly changed by subjecting a mixture of the affinity-controlling material and the target substance, in solution, to a physical stimulus thereby changing the chemical or physical environment around the affinitive substance provided by the polymer.
3. (once amended) The affinity-controlling material [as claimed in claim 1 or 2]of claim 2, wherein the affinity [of]between the affinitive substance [of]and the target substance is reversibly changed by [a]the physical stimulus while keeping at least one of conditions other than temperature constant.

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4. (once amended) The affinity-controlling material [as claimed in claim 1, 2, or 3]of claim 2, wherein said physical stimulus is a temperature change.
5. (once amended) The affinity-controlling material [as claimed in any of claims 1, 2, 3, or 4]of claim 1, wherein the affinitive substance of a target substance does not interact with the stimulus-responsive polymer.
6. (once amended) The affinity-controlling material [as claimed in any of claims 1 to 5]of claim 1, wherein the [bonding ability of]affinity of the affinitive substance for the target substance is [controlled depending]dependent on the length of a spacer by which the affinitive substance of the target substance is bonded to the support[or the size of the stimulus-responsive polymer].
7. (once amended) The affinity-controlling material [as claimed in any of claims 1 to 6]of claim 1, wherein the support comprises hydrophilic porous polymer particles having a uniform particle size produced by [the]a membrane emulsification [method]polymerization of monomers having epoxy groups on side chains and a chemical treatment with an acidic substance or a basic substance[starting with a monomer having epoxy groups in the side chain].
9. (once amended) [A]In a method of separating and purifying a target substance by affinity, the improvement comprising using[with the use of] the affinity-controlling material [as claimed in any of claims 1 to 7]of claim 1.

10. (new) A chromatographic packaging material comprising the affinity-controlling material of claim 1.
11. (new) The affinity-controlling material of claim 1, wherein the affinity of the affinity of the affinitive substance for the target substance is dependent on the size of the stimulus-responsive polymer.

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Claims (clean version encompassing amendments)

What is claimed is:

1. (once amended) An affinity-controlling material, comprising a stimulus-responsive polymer and an affinitive substance (ligand) having affinity for a target substance independently attached to a support matrix.
2. (once amended) The affinity-controlling material of claim 1, wherein the affinity between the affinitive substance and the target substance is reversibly changed by subjecting a mixture of the affinity-controlling material and the target substance, in solution, to a physical stimulus thereby changing the chemical or physical environment around the affinitive substance provided by the polymer.
3. (once amended) The affinity-controlling material of claim 2, wherein the affinity between the affinitive substance and the target substance is reversibly changed by the physical stimulus while keeping at least one of conditions other than temperature constant.
4. (once amended) The affinity-controlling material of claim 2, wherein said physical stimulus is a temperature change.

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5. (once amended) The affinity-controlling material of claim 1, wherein the
affinitive substance of a target substance does not interact with the stimulus-
responsive polymer.
6. (once amended) The affinity-controlling material of claim 1, wherein the affinity
of the affinitive substance for the target substance is dependent on the length of a
spacer by which the affinitive substance of the target substance is bonded to the
support.
7. (once amended) The affinity-controlling material of claim 1, wherein the support
comprises hydrophilic porous polymer particles having a uniform particle size
produced by a membrane emulsification polymerization of monomers having
epoxy groups on side chains and a chemical treatment with an acidic substance or
a basic substance.
9. (once amended) In a method of separating and purifying a target substance by
affinity, the improvement comprising using the affinity-controlling material of
claim 1.
10. (new) A chromatographic packaging material comprising the affinity-controlling
material of claim 1.

11. (new) The affinity-controlling material of claim 1, wherein the affinity of the affinity of the affinitive substance for the target substance is dependent on the size of the stimulus-responsive polymer.

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